We claim:

1. A method of making a compound semiconductor material act as a semimetal semiconductor, comprising the step of doping said material to a dopant density exceeding 1×10^{19} cm^{-3} while maintaining majority carrier mobility sufficient to keep the conductivity above 10,000 mhos.

2. The method of claim 1 wherein the undoped form of said compound material exhibits an electronic affinity larger than 4.1 eV.

3. The method of claim 1 wherein hyperdoping is utilized.

4. The method of claim 1 wherein the doping is not spatially separated from the SMSC material.

5. The method of claim 1 wherein said compound semiconductor material comprises an alloy of phosphorous.

6. The method of claim 1 wherein said step of doping employs a growth temperature between 500 and 800 kelvins.

7. The method of claim 6 wherein said step of doping utilizes molecular beam epitaxy.

8. The method of step 1 where the free carrier concentration exceeds 1×10^{19} cm^{-3}.

9. The method of step 1 where the free carrier concentration

exceeds 2×10^{19} cm^{-3}.

10. The method of step 1 where the free carrier concentration exceeds 4×10^{19} cm^{-3}.

11. The method of step 1 where the free carrier concentration exceeds 8×10^{19} cm^{-3}.

12. The method of step 1 where said material is a bulk material.

13. The method of step 12 where said bulk material is at least 30 nm thick.

14. The method of step 12 where said bulk material is at least 50 nm thick.

15. The method of step 12 where said bulk material is at least 100 nm thick.

16. A compound semiconductor material with conductivity above 10,000 mhos, and free carrier concentration above 10^{19} cm^{-3}.

17. The material of claim 16 where said compound semiconductor material is a III-V compound semiconductor and contains indium.

18. A microelectronic device including from a semimetal semiconductor.

19. A microelectronic device in accordance with claim 18, wherein said device includes a rectifying contact between said semimetal semiconductor and a semiconductor.

20. A microelectronic device in accordance with claim 18, wherein said device includes a high-conductivity channel formed from said semimetal semiconductor.